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FOCUS

Communicating NCID's prevention and control programs for emerging and reemerging infectious diseases

Message from the Director

Dear Colleagues:

This spring, NCID staff continued our strong tradition of quickly responding to health emergencies.

The war in Kosovo has displaced 750,000 persons, and the United States accepted 20,000 refugees. NCID's Division of Quarantine (DQ) has oversight of their medical assessment. To help prepare for the refugees' arrival at Fort Dix, NJ, on May 5, DQ staff had 2 days to locate chest x-ray units, laboratory facilities, and Albanian-speaking interpreters and have examination rooms ready.

Staff from the Division of Parasitic Diseases assessed the extent of lice infestation among the new arrivals (c. 10%), determined whether drug resistance to the common treatment was involved, and developed guidelines for screening, treatment, and follow-up for this condition.

NCID also recently assisted health officials in Malaysia and Singapore in investigating febrile encephalitic and respiratory illnesses among persons who had contact with pigs. More than 250 cases of febrile encephalitis (about 104 fatal) were reported in Malaysia. Laboratory studies showed that most were caused by infection with a previously unrecognized paramyxovirus, now called Nipah virus.

In May, NCID staff traveled to the Democratic Republic of Congo to assist in the investigation of suspected viral hemorrhagic fever among miners; 74 suspected cases (85% fatal) have been reported; five have been confirmed as Marburg hemorrhagic fever.

We commend our colleagues for these efforts.

James M Hughes

James M. Hughes, M.D.

Focus on Viral and Rickettsial Diseases

CDC-CARE workshop fosters local capacity for preventing infectious diseases in Africa

As part of the CARE-CDC Health Initiative, scientists and health educators from NCID and the National Center for HIV, STD, and TB Prevention (NCHSTP) conducted a workshop for 16 CARE staff members, district medical officers, and Ministry of Health representatives from seven anglophone African countries. The workshop, entitled "Prevention through Preparedness," was held on February 8-13, 1999, in Mwanza, Tanzania, with the assistance of local facilitators. The workshop focused on building the capacity of local health professionals in epidemic preparedness, infection control of viral hemorrhagic fevers (VHFs), and prevention and control of cholera and tuberculosis (TB). Prior to the workshop, a laboratory session on diagnostic pathology for infectious diseases was held in Dar es Salaam. The CDC team included Kathy Cavallaro, Amy Corneli, Helen Perry, and Sherif Zaki, Division of Viral and Rickettsial Diseases, NCID; Rob Quick, Division of Bacterial and Mycotic Diseases, NCID; and Eugene McCray and Rose Pray, Division of Tuberculosis Elimination, NCHSTP.

In Africa, VHFs include Lassa fever, Rift Valley fever, Ebola and Marburg hemorrhagic fevers, Crimean-Congo hemorrhagic fever, and yellow fever. Although some of these diseases are relatively rare, their effects can be devastating. The risk of disease transmission in the health care setting is often high because most VHFs can be transmitted through contact with infectious body fluids or contaminated materials. The risk is of particular concern in areas lacking resources such as sterile needles, gloves, and protective clothing. Workshop

Participants at the CDC-CARE workshop set up an isolation area for VHF patients and practiced donning and wearing protective clothing (left photo). Participants also practiced using common household bleach to disinfect equipment, making a sharps container from locally available materials (right photo), and using handwashing techniques based on recommendations described in Infection Control for Viral Hemorrhagic Fevers in the African Health Care Setting, *a manual developed by CDC and WHO.*

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CDC-CARE workshop – continued from page 1

participants learned how to suspect a case of VHF, use locally available supplies for limiting disease transmission in health facilities, and manage VHF outbreaks. Building local capacity in epidemic preparedness will lessen the dependence on external assistance for resources and guidance.

TB accounts for nearly one-fourth of all preventable adult deaths in developing countries, and the rates of infectious pulmonary TB in Africa are among the highest in the world. The impact of TB can be lessened by teaching health professionals prevention and control strategies. Workshop participants learned about directly observed therapy, short-course (DOTS) and about practical techniques to reduce the risk of TB transmission within African health facilities.

Cholera is an acute diarrheal illness, endemic throughout Africa, that is caused by eating or drinking contaminated food or water. Workshop participants learned how to use data more effectively in recognizing and responding to epidemics of cholera to reduce morbidity and mortality rates. ■

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Focus on Hospital Infections

HIP assists Vietnam in preventing hospital infections and antimicrobial resistance

Hospital medical staff assist in a survey of hospital infections.

In collaboration with the Vietnamese Ministry of Health, the Hospital Infections Program (HIP) is conducting several studies to prevent infections in hospitalized patients and to reduce antimicrobial resistance in Vietnam. The HIP effort is being led by Lennox Archibald, Farah Parvez, and William Jarvis.

Hospital infections are a major cause of illness and death in countries with limited resources. Antimicrobial resistance increases the severity of these infections.

HIP has conducted prevalence surveys of infections in the largest hospital in Ho Chi Minh City and assisted in initiating surveillance for hospital infections. Further, HIP has suggested effective measures to improve microbiologic capabilities of diagnosing these infections.

In addition, surveys were conducted to evaluate antimicrobial use and antimicrobial resistance, and hospital personnel were trained to monitor antimicrobial resistance. Work to date has shown that hospital infections are a major problem in this hospital and that there is widespread patient antimicrobial exposure inside and outside the hospital. Intervention studies are under way.

"We have also completed a bloodstream infection (BSI) study among febrile hospitalized patients in Vietnam," said Dr. Archibald. "Results of that study are being used to improve the diagnosis of BSIs in this patient population."

Primary objectives of HIP's work are to 1) determine the prevalence of hospital infections, 2) determine risk factors for these infections, 3) evaluate the patterns of antimicrobial use and the prevalence of antimicrobial resistance in intensive care units, 4) develop models for improved diagnosis, prevention, and treatment of hospital infections and for appropriate use of antimicrobials, and 5) enhance existing microbiology capabilities. ■

Mike Miller elected to ASM position

Michael Miller, chief of the Hospital Infections Program's Hospital Environment Laboratory Branch, has been elected Divisional Group I Representative for the American Society of Microbiology (ASM). As such, he will play a key role in coordinating the programming for the general meeting of the group's five divisions, whose 9,300 microbiologists represent 25% of the ASM membership. Dr. Miller just completed serving as chair of Division C, Clinical Microbiology. ■

Focus on Division of AIDS, STD, and TB Laboratory Research

Fred Quinn awarded Fulbright grant

Fred Quinn, chief of the Pathogenesis Laboratory, Tuberculosis/Mycobacteriology Branch, DASTLR, has been awarded a Fulbright grant to study *Mycobacterium tuberculosis* bacilli during survival and growth with human alveolar epithelial cells, macrophages, and lung granulomas. During the next 4 months, Dr. Quinn will work in the Department of Pathology and Microbiology, University of Bristol, under the direction of Dr. Mumtaz Virji.

Dr. Quinn is one of approximately 2,000 persons in the United States who will study abroad during this academic year through the Fulbright Program. This program, established in 1946 under legislation introduced by the late Senator J. William Fulbright of Arkansas, was designed "to increase mutual understanding between people of the United States and people of other countries." Dr. Quinn's selection represents the first Fulbright research grant awarded to a current CDC employee.

The Fulbright Program is sponsored by the U.S. Information Agency (USIA), an independent foreign affairs agency within the executive branch of the U.S. government that explains and supports U.S. foreign policy and national security interests abroad through a wide range of information programs. During its 52 years, the Fulbright Program has supported the exchange of nearly a quarter of a million people, including more than 70,000 Americans who have studied abroad and more than 130,000 people from other countries who have engaged in similar activities in the United States.

The goal of Dr. Quinn's study is to improve the understanding of the events that occur in the early stages of tuberculosis, between initial infection and the development of overt symptoms. However, the short-term objective of the fellowship is to share tissue-culture model systems and genetic methodologies developed at CDC with collaborating European laboratories while simultaneously acquiring a working knowledge of several technologies, including confocal and video microscopy, used in these laboratories. It is hoped that these collaborations will strengthen future collaborative efforts between U. S. and European laboratories for research into the pathogenesis of *M. tuberculosis*. ■

Focus on Bacterial and Mycotic Diseases

Streptococcus lab marks 50th anniversary

1999 marks the 50th anniversary of the establishment of the Streptococcus Reference Laboratory at CDC. Now in the Division of Bacterial and Mycotic Diseases (DBMD), the laboratory has served as a premiere repository of expertise in the identification of gram-positive cocci. According to Laboratory Chief Richard Facklam, the work of the Streptococcus Laboratory has resulted in countless contributions to the fields of taxonomy, epidemiology, and laboratory science. Several new genera and species have been identified by the laboratory–notably, new species of *Enterococcus*–and the laboratory now identifies more than three times as many types of organisms as it did in 1985. Besides this increase, the expanding immuno-

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IDEA Place

Internet provides larger audience to NCID

It is estimated that over 80 million U.S. adults have access to the Internet. In 1998, 60 million adults used the Internet to find medical information. The World-Wide Web is becoming one of the most common channels for integrating technology into health communication. Communication through the Web has many benefits, including its broad reach, the ability to update information quickly, and the low cost per person contacted. Internet audiences expect the Web to be a wealth of information, and CDC is a trusted source for such information. NCID staff can use the Web to provide information, educate the public, and train professionals.

Programs should consider adding any printed material that is being distributed to the public to NCID's Web site. Many other resources besides printed material can also be made available on the Web. NCID has recently begun using Web-based video technology. This technology allows not only videos to be added to the Web, but professional resources such as teaching slides to be added as well. In addition, seminars and training sessions can be adapted to the Web in a variety of formats, including audio, video, slide, or a combination. Training, in particular, is a growing part of NCID's use of the Internet.

NCID communication professionals can help programs develop content and provide expertise in Web page design and creation. For more information on potential ways to use electronic communication channels or on expertise available to assist with your program, contact Carol Crawford in NCID's Office of Health Communication, 404-639-3852.

Focus on Vector-Borne Infectious Diseases

PBS documentary on Lyme disease narrated by Meryl Streep

On June 18, Connecticut Public Television (CPTV) will air a 60-minute documentary on Lyme disease, narrated by Oscar-winning actress Meryl Streep. The program was developed through a grant awarded by the Division of Vector-Borne Infectious Diseases (DVBID) in FY1998 with funding from a cooperative agreement for Lyme disease education. The documentary will emphasize that Lyme disease is an emerging infectious disease and present a comprehensive strategy for its prevention and control. It highlights practical prevention and control steps that persons can take themselves to avoid the disease and its costly and potentially disabling complications.

According to producer Mary Ann Shanahan, "Narration by Meryl Streep, Connecticut resident, actress, and mother of four children, will add warmth and credibility to the documentary."

The format of the program follows the stories of a gardener, a golfer, and a grade school boy, all of whom became infected with the bacteria *Borrelia burgdorferi* from the bite of a deer tick. The prevention message focuses on avoidance of tick-infested environments; the application of personal protection methods to prevent tick bites, such as use of repellants and proper clothing; and, routine checking of oneself and other family members for ticks, coupled with proper tick removal. As well, the documentary demonstrates practical and successful methods for tick reduction and control, including management of vegetation, application of acaricides to vegetation and deer feeding stations, appropriate fencing to keep deer from property, and rodent control. Video footage is enhanced with digital video graphics, photographs, and field shots to bring the viewer a vivid sense of tick biology and the relationship to the viewer's environment. The film also reviews early symptoms of Lyme disease, with an emphasis on prompt diagnosis and treatment. CPTV worked closely with DVBID to ensure that the material was current and scientifically accurate.

Producer Mary Ann Shanahan (left) and on-line editor Bette Blackwell review video footage for the Lyme disease

Ms. Shanahan, a health educator, previously directed the award-winning Public Broadcasting Service (PBS) documentary "Children and Asthma: A Matter of Life and Breath," featuring Olympic gold medal athlete Jackie Joyner-Kersee, a life-long sufferer of asthma.

"Television is an extremely competitive market. You have to produce a very attractive product to get and retain the viewer's interest. If your product is amateurish, the viewers will know," acknowledges Ms. Shanahan, who also hosts a weekly cable television show, "The Best of Health."

"It was during my research for a segment on Lyme disease for 'The Best of Health' that I became fascinated with this tick-borne illness. I learned that my own state of Connecticut has one of the highest incidence rates in the U.S., " explains Ms. Shanahan.

The program will be close-captioned and dubbed in Spanish, with spin-off public service announcements (PSAs) and commentary segments for use on National Public Radio. Beyond the costs of development, CPTV assumed all costs and responsibility for promoting, publicizing, and broadcasting the educational documentary, PSAs, and commentary segments.

"Based on various rating services, such as Nielsens and Arbitron, 62% (2,030,000) of all Connecticut residents watch Connecticut Public Television," says Don Russell, CPTV General Manager. Mr. Russell is confident that CPTV alone has a viewing audience of 278,000 per program aired. PBS affiliates in New England and Upper Midwest have requested copies of the documentary for local broadcast, thus ensuring a wide viewing audience in Lyme disease–endemic areas. For more information, contact DVBID health educator Jim Herrington, 970-221-6429 (e-mail, jxh7@cdc.gov). ■

Streptococcus lab – continued from page 3

compromised population, the emergence of newly recognized pathogens as causes of illness, and the development of new identification methods have all significantly changed the work and workload of the laboratory since its early days.

In 1998, the Streptococcus Laboratory played a critical role in determining the cause of a large community outbreak of nephritis in Brazil. During the outbreak, 133 persons were hospitalized and three died. EIS Officers Sharon Balter and Andrea Benin of DBMD's Childhood Respiratory Diseases Branch participated in an investigation that identified the source of illness as contamination of unpasteurized cheese by *Streptococcus equi* subspecies *zooepidemicus*. Only after the Streptococcus Laboratory identified this unusual pathogen from throat specimens of ill persons and not from those of control subjects, could the investigation focus on identifying a common source of infection and have the cheese removed from the distribution system. ■

Focus on Quarantine

CDC effort aims to prevent TB cases among Vietnamese immigrants

Susan Maloney, chief, Epidemiology and Special Studies Section, and Frank Seawright, chief, Information Management Section, Special Studies Section, Division of Quarantine (DQ), returned in March from a 5-week stay in Vietnam. There they assessed the progress of a newly piloted project designed to evaluate the efficacy of overseas medical screening procedures and of stateside follow-up and treatment of tuberculosis in U.S.-bound Vietnamese immigrants. The project, which is scheduled to continue through the year 2000, is a collaborative endeavor between the Division of Tuberculosis Elimination (International Activities) National Center for HIV, STD, and TB Prevention, and DQ.

In keeping with DQ's mission to prevent the importation of infectious diseases into the United States, DQ administers overseas medical examination programs to identify immigrants and refugees with inadmissable health conditions such as infectious tuberculosis. In the United States, both the number and the percentage of foreign-born persons diagnosed with TB have increased substantially over the past decade. TB cases among the foreign-born increased by 64% from 1986 to 1997, accounting for 39% of all U.S. TB cases in 1997. In addition, almost 25% of foreign-born persons with TB were immigrants from Vietnam and the Philippines. The success of TB control and prevention efforts in the United States will depend on addressing TB in foreign-born populations. Addressing TB in foreign-born populations depends, in turn, on the efficacy of overseas TB screening and treatment procedures and on adequate follow-up and treatment of TBinfected immigrants by state and local health departments.

To reduce the rate of TB among immigrants who resettle in the United States, the Vietnam project will focus on evaluating current obstacles to the identification, treatment, and follow-up of immigrants with active TB disease. The key objectives of the project include 1) evaluating and optimizing the efficacy of overseas TB screening procedures and 2) improving transmission of immigrant health data to CDC and health departments through development of electronic notification/reporting systems (to permit more timely stateside follow-up and treatment of immigrants). It is hoped that the results of the project can be generalized to other overseas immigrant screening sites. Plans are already under way to expand the development of electronic notification/reporting systems to other countries, including the Philippines, Mexico, China, and India. ■

Collecting sputum specimens from TB patients at a Vietnamese hospital

Focus on Global Health

NCID collaborates with Vietnamese scientists

CDC has recently established a permanent presence in Vietnam with the assignment of Gary West and Mike Linnan to the United States Embassy in Hanoi. Mike will wear multiple hats as the resident technical advisor of the Public Health School Without Walls, HHS/PHS health attache, and CDC representative. Gary will represent both NCID and NCHSTP and will work closely with the Vietnamese National AIDS Committee and the Ministry of Health. Within NCID, work in Vietnam will be coordinated by the Division of Vector-Borne Infectious Diseases (DVBID) and the Office of the Director.

NCID has already begun many collaborative studies and exchanges with scientists from Vietnam (see pp. 2, 5). The Division of Bacterial and Mycotic Diseases (DBMD) is collaborating with scientists in Hanoi at the National Institute of Hygiene and Epidemiology (NIHE) on the epidemiology and treatment of typhoid fever. DVBID is collaborating with staff at the Institute Pasteur in Ho Chi Minh City and at NIHE to study dengue, Japanese encephalitis, plague, and other vector-borne illnesses; the Division of Viral and Rickettsial Diseases (DVRD) is continuing collaborations on hepatitis viruses and is starting new collaborations on rotavirus disease.

Several Vietnamese scientists have worked CDC laboratories. Nguyen Thi Tuyet Nga, an Emerging Infectious Disease Fellow, is now working in DVRD's Hepatitis Branch. Vu Minh Quan, Vietnamese National AIDS Committee, will join CDC's EIS class this year.

James W. LeDuc, Ph.D.
Associate Director for Global Health

New lab for CDC: What's in a name?

by D. Peter Drotman, M.D., M.P.H.

My last job before coming to CDC in Atlanta to join the EIS class of 1979 was as Deputy District Health Officer for East Los Angeles, an underserved area of Los Angeles County, California. The health center I worked out of was about 50 years old at the time, obsolete, overcrowded, inadequate, and earthquake-unsafe. On the other hand, the people served by the center loved it because the facility was one of the few places that provided valuable services to the community and, having been there for so long, had attained a reputation as a reliable and friendly neighborhood fixture. Nevertheless, something had to be done to improve services to the people of East LA.

We did not use terms like "crumbling infrastructure" back then, but that is what was happening to the health center and to public health and medical care both literally and figuratively in East LA. Congressman Edward R. Roybal, who represented the area, brought attention to the issue in East LA and similarly plagued communities across the country. In Congress, he led the fight to rebuild the infrastructure with the establishment of community health centers with public health services, primary care and preventive services, and laboratories being housed under one roof. One reason Congressman Roybal understood the importance of this sort of progress was because he had worked in public health (as a TB controller) early in his career. Such a building opened in East LA in 1979, just as I was moving to Atlanta. I visited it shortly after its dedication as the Edward R. Roybal Comprehensive Health Center (see above), but I never worked there.

Edward R. Roybal Comprehensive Health Center, East Los Angeles

Imagine my delight when, in late 1998, I finally got to meet the now-retired Congressman Roybal in person at the annual meeting of the CDC Foundation in Atlanta. I fully understood the meaning behind CDC Director Jeffrey Koplan's announcement at the meeting that the CDC laboratory building under construction at the Clifton Road campus would be named the "Edward R. Roybal Laboratory Building" (thereby breaking with the longstanding CDC tradition of naming buildings after Arabic numbers, as Dr. Koplan pointed out). Dr. Koplan and others described Congressman Roybal's visits to CDC, particularly one during the 1984 Democratic Convention held in Atlanta, when the congressman personally viewed the shockingly bad state of several buildings on the CDC Chamblee campus.

That visit proved a watershed for congressional support for improving CDC's own infrastructure. Congressman Roybal became a strong advocate for CDC in Congress and built alliances that resulted in support for our rebuilding efforts. You will surely hear more about his work when the new laboratory has its official dedication next year. Hopefully, the congressman will be able to attend in person. In any event, I am one who doubly endorses the honor CDC is bestowing on Congressman Roybal. ■


Edward R. Roybal Laboratory Building, CDC, Atlanta (architect's rendering)

NEWS BRIEFS

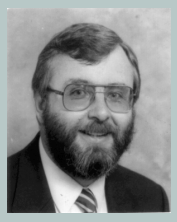
New NCID associate director for laboratory science selected

Janet K.A. Nicholson has been named associate director for laboratory science, NCID. Dr. Nicholson previously served as chief of the Cellular Immunology Section, HIV Immunology and Diagnostics Branch, Division of AIDS, STD, and TB Laboratory Research. Dr. Nicholson is recognized for her contributions in HIV research and clinical testing, particularly regarding evaluating and improving methods for CD4 cell testing.

Satellite conference addresses hantavirus pulmonary syndrome

The Division of Viral and Rickettsial Diseases and the Public Health Training Network (PHTN) sponsored a satellite conference on the clinical and epidemiologic aspects of hantavirus pulmonary syndrome (HPS) on May 27, 1999. The 2-hour videoconference covered various topics, including the pathogenesis of HPS, the role of pathologic and immunopathologic examination in the diagnosis of HPS, the clinical picture of the disease, epidemiologic features of HPS in the United States and South America, and the role of rodent host ecology in the spread of disease to humans. The satellite conference was designed for physicians and nurses, state and local epidemiologists and public health laboratorians, pathologists, specialists in vector control and wildlife biology, and health educators. For additional information, see the PHTN Web site at www.cdc.gov/phtn.

Chief of Mycotic Diseases Branch chosen



David W. Warnock has been named chief of the Mycotic Diseases Branch of the Division of Bacterial and Mycotic Diseases. Dr. Warnock comes to CDC from the Bristol Royal Infirmary, U.K., where he was head of the Public Health Laboratory Service Mycology Reference Laboratory. He was also a senior clinical lecturer in Medical Mycology in the Department of Pathology and Microbiology at the University of Bristol.

The Mycotic Diseases Branch is conducting population-based active surveillance of various systemic fungal infections and has an active program of laboratory research. Major interests include molecular methods for diagnosis, identification, and strain typing. Dr Warnock's research has focused on antifungal drugs, and he is planning several new research projects in this area.

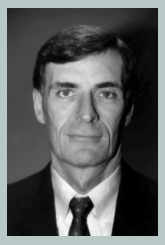
PulseNet is semifinalist for government award

PulseNet, a laboratory network established by the Division of Bacterial and Mycotic Diseases (DBMD), was selected as a semifinalist in the 1999 Innovations in American Government Awards Program. These awards, considered to be among the nation's most prestigious public-service prizes, recognize creative approaches to government, especially those that provide solutions to pressing problems. Bala Swaminathan, chief of DBMD's Foodborne and Diarrheal Diseases Laboratory, describes PulseNet as a national network of public health laboratories that perform DNA "fingerprinting" on bacteria that may be foodborne. The system enables investigators to recognize foodborne outbreaks and implement control measures earlier, thus preventing additional infections.

Associate director for informatics appointed

John Loonsk is NCID's new associate director for informatics and chief information officer. He previously held the position of assistant dean and director of the Office of Information Systems at the University of North Carolina School of Medicine, Chapel Hill.

New associate director for management and operations named



Mark Scally joins NCID as associate director for management and operations. He served as the acting deputy director, National Center for Injury Prevention and Control (NCIPC) for the past year and has been the associate director for management and operations in NCIPC since it was established in 1992. His previous assignments included serving as deputy director, Division of Injury Control (1990-1992) and assistant deputy director, National Institute for Occupational Safety and Health (1988-1990).

News Makers

Awards

David Ashford, Division of Bacterial and Mycotic Diseases, received the 1999 Daniel E. Salmon Award from the National Association of Federal Veterinarians. This award is given annually to recognize outstanding conributions and notable service in the public's interest by a federally employed veterinarian.

Sharon Hudson, behavioral scientist, Dengue Branch, Division of Vector-Borne Infectious Diseases, in San Juan, PR, received the HHS Secretary's Employee of the Month Award for February 1999. She was selected for her "exceptional performance in providing support and technical assistance to Puerto Rico Department of Health at the outset of the 1998 dengue epidemic in Puerto Rico."

Retirement

Donna Miller, Viral Exanthems and Herpesvirus Branch, Division of Viral and Rickettsial Diseases, retired after 34 years of government service. Her career at CDC began in 1965 with studies on the identification and biology of arthropods under the direction of Roy Chamberlain. In 1973, Ms. Miller became one of the few laboratory "smallpox warriors" in the program that was led by James Nakano. With the success of the smallpox eradication program, Ms, Miller participated in the advent of the use of molecular biology techniques in combating infectious disease.

INSIDE

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